PCEC4301 **MICROPROCESSORS** (3-0-0)

Module I:
Organization of Microprocessor

Introduction to the general concept of microprocessor organization, I/O sub-systems, programming the system, ALU, instruction execution, instruction word format, addressing modes, address/data/control bus, tristate bus, interfacing I/O devices, data transfer schemes, architectural advancements of microprocessor, evolution of microprocessors.

Module II:
Intel 8086- Hardware Architecture:

Introduction, Bus interface unit(BIU), Execution unit(EU), pin description, register organization, instruction pointer, data register, pointer and index registers, status register, stack, external memory addressing, bus cycle (minimum mode):memory or I/O read/write for minimum mode, clock generator Intel- 8284A, bidirectional bus trans-receiver 8286/8287, bus controller 8288, bus cycle memory read/write for minimum mode, 8086 system configuration (minimum mode as well as maximum mode), memory interfacing, interrupt processing; software interrupts, single step interrupt, non-maskable interrupt, maskable interrupt, interrupt priority, DMA, Halt State, Wait for Test state, comparison between 8086 an 8088.

Module III:
Instruction set and programming:

Programmer's model of Intel 8086, operand type, addressing modes 8086 assembler directives, instruction set, programming examples on data transfer group, arithmetic-logical groups, control transfer groups (loop and loop handling instruction), conditional and unconditional group, procedures and stack operations, string instructions.,branch program structure like IF-THEN-ELSE REPEAT-UNTIL and WHILE-DO,

I/O Interfacing ;

8-bit input- output port 8255 PPI, memory mapped i/o ports,8254 programmable Interval Timer, 8273 Programmable Direct Memory Access Controller, 8251 USART, 8279 Programmable Keyboard/Display Controller.

Text Books:
1.The 8088 and 8086 Microprocessors Programming, Interfacing, Softw, Hardware and Application; by Walter A. Triebel & Avtar Singh ; Pearson India.
2. Microprocessors and Interfacing; by Douglas V Hall ; McGraw Hill.
Reference Book:
1. Microprocessors and Micro controllers Architecture, programming and system Design 8085, 8086, 8051, 8096: by Krishna Kant; PHI.
2. The 8086 Microprocessor: Programming & Interfacing the PC- Kenneth J. Ayala, Delmar Cengage Learning, Indian Ed.